6. ROADSIDE BMPS

Roads and driveways are big contributors of water runoff and surface water pollution. Phosphorus, which readily attaches to soil particles such as the gravel and dirt used for roads, can harm water quality when these soil particles are washed into a waterbody.

Phosphorus is not the only pollutant that can come from a roadway. All of the gas, greases, oils, road salt, and heavy metals (such as lead from regular gasoline) that drip from cars onto the road or driveway can also be transported in surface waters. Also, much of the gravel from regularly maintained access roads is washed into waterways with every major storm. Generally, the less road surface in a lake watershed, the better the water quality will be. In some situations, it may be possible for property owners to reduce the width of their road or driveway. A narrow roadway with several pull-out areas for passing cars may be a good option on seasonal roads with light traffic.

VEGETATED PHOSPHORUS BUFFER STRIPS

One of the first orders of business is to establish vegetation between the road or driveway and the waterbody. If road runoff can be filtered through a natural or planted vegetated buffer, it will percolate into the ground, depositing sediments, oils and phosphorus before it reaches surface waters.

WATER BARS

If the road gravel is continually eroding, consider installing a speed bump-type structure called a water bar. Water bars are small earth dams formed in the road to force water off the road, out of ditches, and into the woods (or buffer strip area). Refer to water bar figure for instructions on how to install a water bar. This measure will pose a challenge if the road must be plowed in the winter.

If the gravel or dirt road surface gets severely damaged with heavy rainstorms or spring runoff, or it needs year round maintenance, it may be time to consider a more permanent asphalt surface. If an asphalt surface is required, a modified water bar can be installed. A small asphalt "speed bump" 2 to 3 inches high can be built to divert water into the buffer areas. This will be low enough to be plowed, but will still divert rainwater during average storms.

How to Install a Water Bar

- Install bars with a skid blade, a dozer blade, or by hand.
- If recreational vehicles will use the road, use a log as a core for the bar.
- Install the bar so it is at a 30 degree angle downslope.
- Extend the bar into the side ditch or cut slope, so that it intercepts water there.
- Extend the outlet end of the bar beyond the road and place rocks, bushes or sod to filter the water.
- Construct the bar so that it extends at least 12 inches above the road surface and 12 inches below the road surface.

- Space the bars according to the following table:

Road Grade	Space Between Water Bars
1-2%	250 ft
3-5%	135-200 ft
6-10%	80-100 ft
11-15%	60-80 ft
16-20%	45-60 ft
21+%	40 ft

Owners of seasonal facilities can try seeding bare dirt driveways in the fall when they close down operations. Rake the dirt and scatter inexpensive annual rye grass seed over the surface. Don't bother to fertilize or lime. If hay mulch is available, mulch the area as well. This simple, inexpensive practice will protect the gravel surface from fall rainfall and spring runoff - two high impact seasons.

DITCH EROSION

Eroding ditches pose a chronic pollution problem to waterbodies. The best solution is to line them with sod, vegetation or stone. To determine the appropriate lining for the ditch, refer to the section on permanent ditch linings, page **Error! Bookmark not defined.**.

STREAM CROSSINGS

Don't underestimate the importance of streams that flow through your property! These are the source of your lake's water, and they must be protected. If pollutants are reaching these streams, sooner or later the water quality at your waterfront property will be impacted.

- Correct erosion from road surfaces and road ditches.
- Don't let road runoff flow directly into the stream. Divert it into the woods or to a vegetated buffer strip.
- Install stone headwalls at culvert inlets and stone aprons or plunge pools at culvert outflows.

Maintenance

Improper methods and timing of maintenance procedures on gravel roads and driveways can cause serious environmental damage.

- Don't dig out road ditches in the late fall or early spring when vegetation in the ditch can't be grown quickly to stabilize the gravel and dirt.
- Grading operations should not leave earth berms at the edge of the road. They tend to channel water in the roadway instead of allowing free drainage to the woods or buffer areas.
- Do repair work on streams during periods of low flow (generally late summer). Obtain permits from the DEP for this work.

- Don't ignore chronic road erosion problems! Work with your local road association or the public works department of your municipality about correcting these problems.